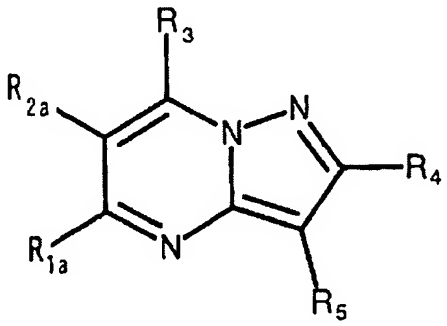
Amendments to the Claims

This Listing of Claims will replace all prior versions and listings in this application. Claims 3-14 and 21-23 are pending. Claims 1-2, 19, and 27-30 stand withdrawn. Claims 15-18, 20, 24-26 stand canceled.

Listing of Claims

1. (Withdrawn) A compound represented by the formula:



(Ia)

or a prodrug, pharmaceutically acceptable salt or solvate thereof,

wherein, in the formula (Ia), R_{1a}, R_{2a}, and R_3-R_5 represent, each independently, hydrogen, halogen, lower alkyl that may be substituted, lower alkenyl that may be substituted, lower alkynyl that may be substituted, cycloalkyl that may be substituted, cycloalkenyl that may be substituted, cycloalkynyl that may be substituted, aryl that may be substituted, heterocyclic group that may be substituted, hydroxy, alkoxy that may be substituted,

aryloxy that may be substituted, heterocyclic oxy that may be substituted, acyl that may be substituted, monosubstituted carbonyloxy that may be substituted, carbamoyl that may be substituted, diazo, amidino that may be substituted, azido, nitroso, nitro, amino that may be substituted, imino that may be substituted, cyano, mercapto, monosubstituted thio that may be substituted, monosubstituted thioxy that may be substituted, monosubstituted sulfinyl that may be substituted, monosubstituted sulfonyl that may be substituted, sulfo, or trisubstituted silyl, and any combinations of R_{1a}, R_{2a}, R_3-R_5 may together form a ring structure; provided that the following (i)-(x) are excluded:

(i) a compound, wherein R_{1a} is hydrogen, OH, lower alkyl, cycloalkyl having a carbon number of 3-8, halogenated lower alkyl, or phenyl;

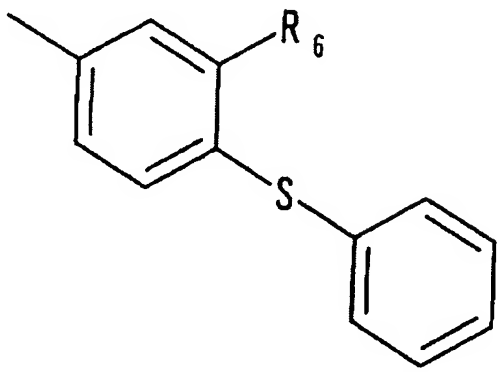
R_{2a} is hydrogen, lower alkoxycarbonyl, lower alkoxy, halogen, lower alkyl, cycloalkyl having a carbon number of 3-8, lower alkoxycarbonyl lower alkyl, carboxyl, carboxy lower alkyl, -$CONHR_6$ (R_6: hydrogen; phenyl that may have a halogen atom, or lower alkyl), cyano; phenyl that may have a substituent selected from the group consisting of a hydroxyl group, halogen atom, lower alkyl group, lower alkoxy and phenylthio group; phenyl lower alkyl group that may have a substituent selected from the group consisting of hydroxyl group and lower alkoxy group on the phenyl ring; lower alkanoyloxy lower alkyl; benzoyl group; lower alkanoyl group that may have halogen atom; or hydroxy lower alkyl group

that may have a substituent selected from the group consisting of a phenyl group and halogen atom;

R_3 is hydrogen, or OH;

R_4 is hydrogen, lower alkyl, lower alkoxy lower alkyl, or halogenated lower alkyl;

R_5 is



and

R_6 is hydrogen, lower alkyl, or lower alkoxy;

(ii) a compound, wherein R_{1a} and R_{2a} are, each independently, hydrogen, halogen, CN, alkyl, alkenyl, alkynyl, cycloalkyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, amino, alkylamino, or (substituted) phenyl; and

R_3 is (substituted) aryl, or (substituted) heteroaryl;

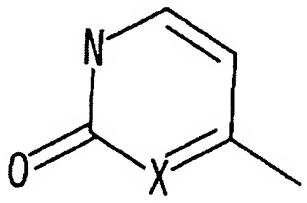
(iii) a compound, wherein R_{1a} is hydrogen, (substituted) lower alkyl, cycloalkyl, thienyl, furyl, lower alkenyl, or (substituted) phenyl;

R_{2a} is hydrogen or lower alkyl; and

R_3 is amino that may be substituted;

(iv) a compound, wherein R_{1a} is hydrogen, alkyl, OH, O-alkyl, halo, amino, or nitro;

R_{2a} is



wherein X is CH or N, and the nitrogen atom on the R_{2a} ring may be substituted; and

R_3 and R_5 are, each independently, hydrogen, alkyl, alkenyl, alkynyl, aryl, halo, OH, or heterocyclyl;

(v) a compound, wherein R_{1a} is hydrogen, alkyl, alkoxy, OH, halo, NO_2, or NH_2;

R_{2a} is hydrogen, (substituted) alkyl, cycloalkyl, alkoxy, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl, (substituted) heterocyclyl, alkoxy-NRR, NO_2, OH, NH_2, or (substituted) heteroaryl;

R_3 and R_4 are, each independently, hydrogen, alkyl, aryl, cycloalkyl, OH, halo, amino, or nitro; and

R_5 is hydrogen, (substituted) alkyl, cycloalkyl, aryl, (substituted) heterocyclyl, halo, OH, or (substituted) heteroaryl;

(vi) a compound, wherein R_{2a} is substituted acetyl, or heterocyclic-substituted lower alkylene or lower alkenylene; and

R_3 is phenyl that may be substituted;

(vii) a compound, wherein R_{1a} and R_{2a} are each independently, hydrogen, halogen, (substituted) alkyl, (substituted) alkenyl, (substituted) aryl, (substituted) aralkyl, (substituted) heterocyclic group, or together form an alkylene group; and

R_3 is amino that may be substituted;

(viii) a compound, wherein R_{1a} is hydrogen, alkyl, cycloalkyl, alkoxy, (alkyl)amino, aryl, or heteroaryl;

R_{2a} is hydrogen, alkyl, halogen, cyano, hydroxy, or alkoxy;

R_3 is amino that may be substituted, or alkoxy that may be substituted; and

R_5 is aryl;

(ix) R_{1a} is lower alkyl that is substituted with a substituent selected from the group consisting of carboxy, lower alkoxycarboxy, and substituted carbamoyl;

R_{2a} is hydrogen;

R_3 is phenylcarbonylamino, wherein said phenyl group may be substituted; and

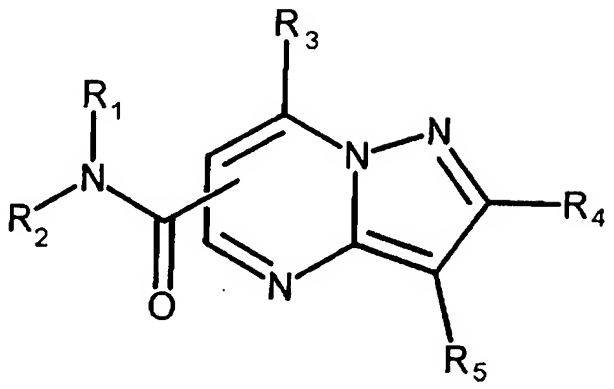
R_4 and R_5 are hydrogen; and

(x) (2, 5-dimethyl-pyrazolo-[1, 5-a]-pyrimidine-7-yl) succinic acid;

wherein the undefined substituents in the compounds (i)-(x) represent any substituents.

2. (Withdrawn) The compound of claim 1, wherein either one of R_{1a} and R_{2a} is hydrogen, and the other one is carbamoyl that may be substituted.

3. (Currently Amended) ~~The~~ A compound ~~of claim 1,~~ represented by the formula:



(I)

or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof,

wherein, in the formula (I),

R_1 is hydrogen, lower alkyl, amino, substituted amino ~~that may be substituted~~, ~~or~~ aryl lower alkyl, or substituted aryl lower alkyl ~~that may be substituted~~; and

R_2 is hydrogen, lower alkyl, substituted lower alkyl ~~that may be substituted~~, cycloalkyl, substituted cycloalkyl ~~that may be substituted~~, cycloalkyl lower alkyl, substituted cycloalkyl lower alkyl ~~that may be substituted~~, lower alkoxy, substituted lower alkoxy ~~that may be substituted~~, aryl, substituted aryl ~~that may be substituted~~, aryl lower alkyl, substituted aryl lower alkyl ~~that may be substituted~~, aryloxy lower alkyl, substituted aryloxy lower alkyl ~~that may be substituted~~, lower alkylsulfonyl, substituted lower alkylsulfonyl ~~that may be substituted~~, arylsulfonyl, substituted arylsulfonyl ~~that may be substituted~~, heteroaryl lower

alkyl, substituted heteroaryl lower alkyl ~~that may be substituted~~, heterocyclic group lower alkyl, substituted heterocyclic group lower alkyl ~~that may be substituted~~, ~~or~~ amino, or substituted amino ~~that may be substituted~~; or

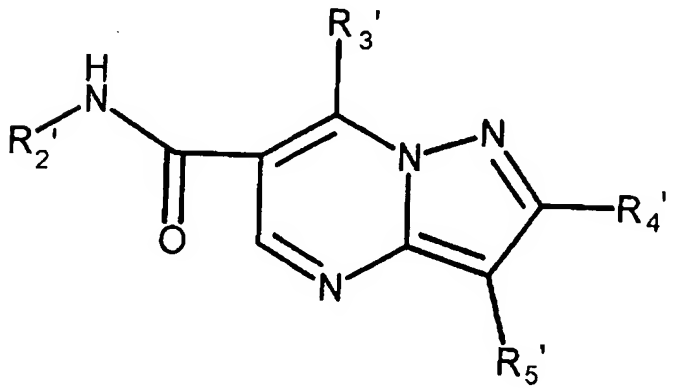
R_1 and R_2 together with the adjacent N atom may form a heterocycle- or substituted heterocycle ~~that may be substituted~~having 5-7 members;

R_3 is hydrogen, hydroxy, lower alkoxy, halogen, ~~or~~ amino, di-lower alkyl amino, lower alkyl carbonyl amino, lower alkoxy carbonyl lower alkyl amino, hydroxy lower alkyl amino, carbamoyl amino, lower alkoxy lower alkyl amino, lower alkyl sulfonyl amino, or cycloalkyl amino, wherein said substituent may together with the N-atom of the amino form a heterocycle; ~~amino that may be substituted;~~

R_4 is hydrogen, lower alkyl, ~~or~~ aryl, or substituted aryl ~~that may be substituted~~; and

R_5 is hydroxy, lower alkyl, substituted lower alkyl ~~that may be substituted~~, aryl, substituted aryl ~~that may be substituted~~, aryl lower alkyl, substituted aryl lower alkyl ~~that may be substituted~~, cycloalkyl lower alkyl, substituted cycloalkyl lower alkyl ~~that may be substituted~~, aryl lower alkenyl, substituted aryl lower alkenyl ~~that may be substituted~~, cycloalkyl lower alkenyl, substituted cycloalkyl lower alkenyl ~~that may be substituted~~, aryl lower alkynyl, substituted aryl lower alkynyl ~~that may be substituted~~, cycloalkyl lower alkynyl, substituted cycloalkyl lower alkynyl ~~that may be substituted~~, aryl carbonyl, substituted aryl carbonyl ~~that may~~

~~be substituted~~, aryl lower alkyl carbonyl, substituted aryl lower alkyl carbonyl ~~that may be substituted~~, heterocyclic group, substituted heterocyclic group ~~that may be substituted~~, halogen, CHO, amino, substituted amino ~~that may be substituted~~, ~~or~~ imino, or substituted imino ~~that may be substituted~~; provided that a compound represented by the following formula is excluded:

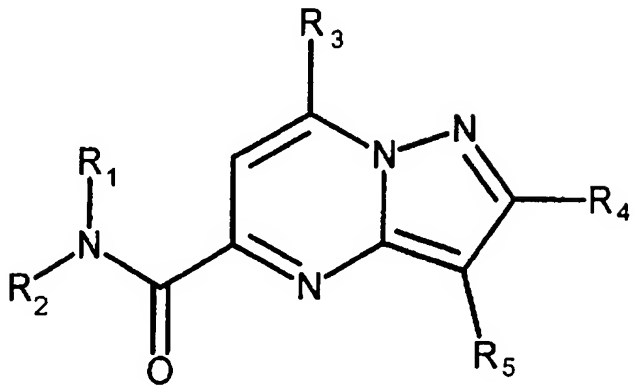


(I')

wherein, in the formula (I'),

R_2' is hydrogen, phenyl ~~that may be~~or phenyl substituted with lower alkyl or halogen; R_3' is hydrogen or hydroxy; R_4' is hydrogen or lower alkyl; and R_5' is phenyl having an unsubstituted phenylthio group ~~that may further be~~or a phenylthio group substituted with lower alkyl or lower alkoxy.

4. (Currently Amended) The compound of claim 3, represented by the formula:



(I-1)

or a ~~a prodrug,~~ pharmaceutically acceptable salt or solvate thereof,

wherein, in the formula (I-1), each substituent is ~~defined above~~as defined in claim 3.

5. (Currently Amended) The compound of claim 3 or 4, or ~~a prodrug~~, a pharmaceutically acceptable salt or solvate thereof, wherein R_1 is hydrogen; and R_2 is aryl or substituted aryl ~~that may be substituted~~.

6. (Currently Amended) The compound of claim 3 or 4, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein R_3 is hydrogen, ~~or~~ amino, di-lower alkyl amino, lower alkyl carbonyl amino, lower alkoxy carbonyl lower alkyl amino, hydroxy lower alkyl amino, carbamoyl amino, lower alkoxy lower alkyl amino, lower alkyl sulfonyl amino, or cycloalkyl amino, wherein said substituent may together with the N-atom of the amino form a heterocycle.~~amino that may be substituted.~~

7. (Currently Amended) The compound of claim 3 or 4, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein R_4 is hydrogen.

8. (Currently Amended) The compound of claim 3 or 4, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein R_5 is aryl or substituted aryl ~~that may be substituted~~.

9. (Currently Amended) The compound of claim 3 or 4, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein R_1 is hydrogen; R_2 is phenyl or substituted phenyl ~~that may be substituted~~; R_3 is hydrogen, ~~or~~ amino, or substituted amino ~~that may be substituted~~; R_4 is hydrogen; and R_5 is phenyl or substituted phenyl ~~that may be substituted~~.

10. (Currently Amended) The compound of claim 9, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein the substituent on the phenyl in R_2 ~~that may be substituted~~ is one or more selected from the group consisting of heterocyclic group, substituted heterocyclic group ~~that may be substituted~~, lower alkyl carbonyl, cycloalkyl, lower alkyl, amino, substituted amino ~~that may be substituted~~, halogen, halogenated lower alkyl, lower alkoxy, carboxy lower alkyloxy, heterocyclic group lower alkyloxy, amino lower alkyl, hydroxy, cyano, carbamoyl-heterocyclic group-oxy, cyano lower alkyl, and phenyl.

11. (Currently Amended) The compound of claim 10, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein R_2 is heterocyclic group or substituted heterocyclic group phenyl ~~that may be substituted~~.

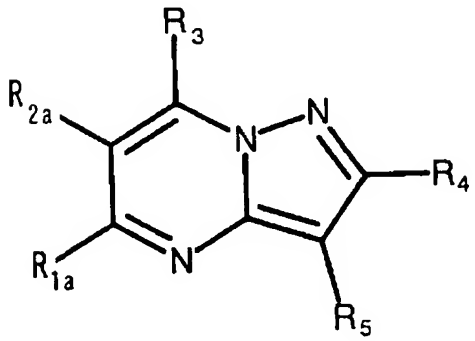
12. (Currently Amended) The compound of claim 10, or a ~~prodrug~~, pharmaceutically acceptable salt or solvate thereof, wherein R_2 is piperazino phenyl, substituted piperazino phenyl ~~that may be substituted~~, piperizino phenyl, substituted piperizino phenyl ~~that may be substituted~~, ~~or~~ pyrrolidino phenyl, or substituted pyrrolidino phenyl ~~that may be substituted~~.

13. (Currently Amended) The compound of claim 9, or a ~~prodrug,~~ pharmaceutically acceptable salt or solvate thereof, wherein the substituent on the phenyl in R_5 ~~that may be substituted~~ is one or more selected from the group consisting of halogen, halogenated lower alkyl, aryl lower alkyloxy, lower alkyl, lower alkoxy, hydroxy, lower alkylthio, phenyl, phenyloxy, phenyl lower alkyl, phenyl lower alkylamino, phenyl lower alkylthio, phenyl lower alkenyl, phenyl carbamoyl, amino, cycloalkyl lower alkyloxy, and heteroaryl lower alkyloxy.

14. (Currently Amended) A pharmaceutical composition, comprising the compound of any one of claims ~~1~~3-13 and a physiologically acceptable carrier.

15-18. (Canceled).

19. (Withdrawn) A NAD(P)H oxydase inhibitor, comprising a compound represented by the formula (Ia):



(Ia)

or a prodrug, pharmaceutically acceptable salt or solvate thereof,

wherein, in the formula, R_{1a}, R_{2a}, R_3-R_5 represent, each independently, hydrogen, halogen, lower alkyl that may be substituted, lower alkenyl that may be substituted, lower alkynyl that may be substituted, cycloalkyl that may be substituted, cycloalkenyl that may be substituted, cycloalkynyl that may be substituted, aryl that may be substituted, heterocyclic group that may be substituted, hydroxy, alkoxy that may be substituted, aryloxy that may be substituted, heterocyclic oxy that may be substituted, acyl that may be substituted, monosubstituted carbonyloxy that may be substituted, carbamoyl that may be substituted, diazo, amidino that may be substituted, azido, nitroso, nitro, amino that may be substituted, imino that may be substituted, cyano, mercapto, monosubstituted thio

that may be substituted, monosubstituted thioxy that may be substituted, monosubstituted sulfinyl that may be substituted, monosubstituted sulfonyl that may be substituted, sulfo, or trisubstituted silyl, and any combinations of R_{1a}, R_{2a}, R_3-R_5 may together form a ring structure.

20. (Canceled)

21. (Currently Amended) A method of preventing or treating NAD(P)H-related diseases, comprising administering a therapeutically effective amount of the compound of any one of claims ~~1~~3-14 ~~20~~ to inhibit NAD(P)H oxidase in an animal, including a human.

22. (Original) The method of claim 21, wherein said disease is selected from the group consisting of inflammation, pulmonary circulation disorders, ischemic heart disease, cerebral circulation disorders, arteriosclerosis, diabetic complications, hypertension, and proliferative disorders.

23. (Original) The method of claim 21, wherein said disease is brain infarction or diabetic retinal disorder.

24-26. (Canceled)

27. (Withdrawn) The compound of claim 1, or a prodrug, pharmaceutically acceptable salt or solvate thereof, wherein R_{1a} is carbamoyl that may be substituted.

28. (Withdrawn) The compound of claim 1, or a prodrug, pharmaceutically acceptable salt or solvate thereof, wherein R_{1a} is carbamoyl that may be substituted, and R_{2a} is hydrogen.

29. (Withdrawn) A medicament, comprising the compound of claim or 28

30. (Withdrawn) A NAD(P)H oxydase inhibitor, comprising the compound of claim 27 or 28.